



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 :  B65D 85/57		A1	(11) International Publication Number: <b>WO 99/26866</b>  (43) International Publication Date: 3 June 1999 (03.06.99)
(21) International Application Number: PCT/US98/25271  (22) International Filing Date: 25 November 1998 (25.11.98)		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).	
(30) Priority Data: 08/978,446 25 November 1997 (25.11.97) US		Published <i>With international search report.</i>	
(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Application US 08/978,446 (CON) Filed on 25 November 1997 (25.11.97)			
(71)(72) Applicant and Inventor: KOCH, Hans, G. [CA/US]; 1100 Southwest 27th Street, Renton, WA 98055 (US).			
(74) Agent: JOHNSON, Lee, E.; Christensen, O'Connor, Johnson & Kindness PLLC, Suite 2800, 1420 Fifth Avenue, Seattle, WA 98101 (US).			
<b>(54) Title:</b> ALTERNATIVE CD-ROM/DVD PACKAGING DEVICE			
<b>(57) Abstract</b> <p>A holder (4) for a compact disc (1). The holder includes a base (5) approximating the size of a compact disc for nesting a compact disc (1). A centrally located rosette (13) integrally cast with the base (5) centers the CD. The rosette (13) has engagement arms (14) molded to and extending upwardly from the base for centering the CD, and further extending radially inwardly, creating a circular opening (24). It also includes a lid (8) pivotally mounted on the base (5) and having a centrally located retaining ring (19) and button fastener (16) for insertion into the circular opening (24) of the rosette (13) as the lid (8) is moved from the open position to the closed position. With the lid (8) in the closed position, the button fastener holds the CD firmly in place and additionally functions as a latch to retain the lid (8) in the closed position.</p>			

**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Amenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	MU	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		

## ALTERNATIVE CD-ROM/DVD PACKAGING DEVICE

### Field of the Invention

The present invention relates generally to storage devices and, more particularly, for devices holding compact discs (CDs).

5

### Background of the Invention

With the growing use of compact digital media a variety of holders for shipping and storing CDs are available. One such holder has a rectangular plastic base with a centrally located hub on which the CD may be placed. The CD is frictionally retained on the hub by a plurality of radially outwardly biased and axially extending flexible segments. A lid is pivotally mounted on the base. To remove the CD from the holder, the lid is opened and the CD is held by placing the thumb and index finger on the edge of the CD and then lifting the CD from the hub by pressing the forefinger on the hub. The problem with these holders is that they are somewhat cumbersome to use and require a certain amount of force for CD removal.

15

Another type of holder has a base to which a rectangular top and bottom are mounted for rotation about a common axis. The CD is retained on a hub assembly mounted on the base. To remove the CD from the holder, the top is opened to a position where it engages the base. As the top is further opened, it causes the base to pivot upward from the bottom, permitting a pivoting member in the hub assembly to rotate, releasing the CD from the hub. These holders are more complex and more expensive to manufacture than the holders described above.

A third type of holder includes a base having a hub on which the CD is retained. A lid pivotally mounted on the base has an extractor with a barb, which disengages the CD and functions as a latch for the lid. To remove the CD from the

holder, the lid is opened, permitting the barb of the extractor to disengage the CD from the hub. The barb of the extractor disengages the CD by drawing it upward on the hub until it is free of the hub. As it disengages the CD, the barb is in direct contact with the CD, creating a potential for scratches. An additional problem 5 created is the potential for breakage of the protruding barb.

Accordingly, it is an object of this invention to provide an improved holder for CDs in which the CD is automatically disengaged from the base upon the opening of the lid by the user but which is relatively simple in design and inexpensive to manufacture.

10 It is another object of this invention to provide an improved holder for CDs in which the CD can be removed from the base without direct application of force to the CD by the user.

It is another object of this invention to provide an improved holder for CDs that provides CD removal with no or low stress on the CD.

15 It is another object of this invention to provide an improved holder for CDs in which the means to disengage the CD does not entail direct contact with the CD.

It is another object of this invention to provide an improved holder for CDs in which the means to disengage the CD, which also functions as positive closure, does not have a potential breakage problem.

20 It is another object of this invention to provide an improved CD holder which can be easily opened by a user even if he or she is unfamiliar with the device.

It is another object of this invention to provide a holder for CDs in which the lid and outer covering of the base can be constructed of cardboard, thereby reducing cost and providing a surface upon which information can be printed.

25 Summary of the Invention

This invention is a holder for a compact disc. The holder includes a base having a centrally located rosette that centers the CD. A lid mountable on the base includes a centrally located button fastener and a centrally located retaining ring.

30 In accordance with a more detailed aspect of this invention, the holder includes a lid hingedly mounted on the base for movement between an open and a closed position. As the lid is folded over and closing force is applied by pressing downward on the center of the lid, a button fastener mounted on the inside of the lid is inserted into the rosette by the closing force. The button fastener has a tapered edge on one end for ease of insertion and a small shoulder on the other end for 35 positive fastening into the rosette. The insertion of the button fastener into the rosette

causes the rosette to expand slightly to contact the inner diameter of the CD, thereby applying a slight force to the inner edge, grasping and centering the CD. Concurrently, the closing force allows a retaining ring mounted concentrically to the button fastener to contact the CD, and hold the CD firmly in place. As the lid is lifted 5 open, the button fastener is disconnected from the rosette and the retaining ring is lifted off the CD, leaving the CD resting freely in the base and ready for removal with or without finger indents molded into the base.

In accordance with another embodiment of this invention, the base also includes spring tabs molded or mounted on the base, which expand outwardly, 10 elevating the CD for removal when the lid is in the open position.

#### Brief Description of the Drawings

The foregoing aspects and many of the attendant advantages of this invention will become more readily appreciated as the same becomes better understood by reference to the following detailed description, when taken in conjunction with the 15 accompanying drawings, wherein:

FIGURE 1 is a perspective view of the preferred embodiment of the invention showing the lid in an open position and the CD exploded above the holder;

FIGURE 2 is a sectional view of the holder with the lid open and the CD above the base;

20 FIGURE 3 is an enlarged, partial sectional view of the holder with the lid in the closed position and the CD resting in the recess of the base;

FIGURE 4 is a perspective view of a second embodiment of the holder including the spring tabs;

25 FIGURE 5 is a sectional view of the holder including the tabs with the lid open and the CD above the base;

FIGURE 6 is a sectional view of the holder with the lid open and the CD resting on the spring tabs; and

FIGURE 7 is an enlarged, partial sectional view of the holder including the 30 spring tabs with the lid in the closed position and the CD resting on the spring tabs.

#### Detailed Description of the Invention

In FIGURE 1, a holder for a CD is illustrated and generally designated by the number 4. As used herein the term compact disc (CD) is intended to encompass all types of readable and/or writeable optical compact discs, including music CDs, digital video discs (DVD), and CD-ROMs. The holder includes a base 5, preferably formed of plastic, and a cover 6, preferably constructed from heavy paper or paperboard. 35

The cover is folded along fold lines 21 and 22 which divide the cover into three sections. The three sections are lid 8, integral hinge 23, and bottom covering 7.

In the preferred embodiment the base is molded from a suitable polymeric material, such as plastic. The base 5, which is attached to the bottom covering 7 by a suitable adhesive, includes a protective recess 9 which is adapted to receive a standard CD 1. The recess is formed by a downwardly extending circular wall 10 and a circular planar bottom surface 11. For access to the edges of the CD for removal purposes, the base further includes two sets of diametrically opposing pairs of indents 12 formed in the base at the periphery of the recess 9. The indents extend downwardly from the upper surface of the base 5 and intersect the arcuate wall to expose edges of the CD when nested in the recess 9. Integrally cast with the base is a centrally located rosette 13. The rosette includes a circular ledge 15 and flexible arms 14 extending upward from the base 5 and arranged in a circular pattern for engaging the CD cutout 25. The arms 14 have segments 14a at their upper end that extend radially inward and collectively terminate to define a circular opening 24 in the rosette.

The lid 8 includes a centrally located button fastener 16 and a centrally located retaining ring 19, both of which are attached to the lid 8 with a suitable adhesive. The button fastener extends downwardly from the ring 19 and has a frustoconically shaped leading portion for ease of insertion into the circular opening 24 of the rosette 13. The leading portion 17 tapers upwardly and outwardly from the button face, which has a diameter less than the diameter of the opening in the rosette, to the outer circular edge of a shoulder 18 that has a diameter larger than the opening 24 in the rosette. Base 27 of the button fastener 16 is cylindrical and has a diameter that is still slightly larger than the diameter of the rosette opening 24. The base 27 extends upwardly from the shoulder 18 and is fastened to the bottom of the lid 8 by a suitable adhesive.

In order to insert a CD 1 into the holder, lid 8 is opened and the CD is placed over the recess 9 of the base 5 with the CD cutout 25 centered around the rosette 13. The outer diameter of the rosette 13 is slightly less than the diameter of the cutout 25 so that the rosette will pass through the cutout without resistance, both when the CD is inserted in and removed from the holder. Next, the lid is closed by folding the lid over the base. As the lid closes, the button fastener 16 is automatically aligned with the rosette 13. Closing force is applied by pressing downward on the outside center portion of the lid. The closing force inserts the button fastener 16 into the circular

opening 24 of the rosette 13. The tapered leading portion 17 of the button fastener 16 engages the rosette opening 24 for ease of insertion. The shoulder 18 passes through the opening 24 and engages the bottom side of the rosette to positively fasten the button in the rosette 13. Because the diameter of the base 27 of 5 the button fastener 16 is slightly larger than the diameter of the opening 24 in the rosette 13, a radially outwardly directed force is exerted on the radial segments of the arms 14 of the rosette. This causes a slight increase in the outer diameter of the rosette causing it to snugly engage the edge 26 of opening 25 in the CD, and thus securely retain it in place. Concurrently, the closing force allows the retaining ring 19 10 to contact the CD, and transfer the force from the retaining ring to the CD to the base 5, thereby holding the CD firmly in place in the recess 9. As shown in FIGURE 3, when the lid is in the closed position, the retaining ring 19 rests against the upper surface 3 of the CD 1 and the lower surface 2 of the CD rests against the ledge 15 of the rosette 13.

15 In order to remove the CD from the holder, the lid 8 is swung toward an open position. As the lid is opened, the button fastener 16 is removed from the rosette 13, allowing the diameter of the rosette to return to its original dimension and disengaging the rosette from the CD opening. At the same time, the retaining ring 19 is lifted off the CD, leaving the CD resting freely in the recess 9 of the base and ready 20 for removal.

Referring to FIGURES 4, 5, and 6, another embodiment is illustrated in which the base 5 has spring tabs 20 molded into the base, as shown in FIGURE 4. Four tabs 20 are positioned 90° apart and spaced outwardly from the rosette. The tabs are capable of exerting an upwardly biasing force on the CD. In this embodiment, the 25 CD 1 rests on the spring tabs 20 and is centered by the rosette 13, as shown in FIGURE 6. When closing force is applied to the lid 8, the closing force is transferred from the retaining ring 19 to the CD 1 to the spring tabs 20, compressing the spring tabs and holding the CD firmly in place. As shown in FIGURE 7, when the lid is in the closed position, the retaining ring 19 rests against the upper surface 3 of the CD 1 30 and the lower surface 2 of the CD rests against the ledge 15 of the rosette 13 and the compressed spring tabs 20. The button 16 and the rosette 13 function in the same manner as in the previous embodiment.

As the lid 8 is opened, the button fastener 16 is removed from the rosette 13 and the retaining ring is lifted off the CD 1. Concurrently, the upwardly biased spring 35 tabs flex upwardly, elevating the CD and positioning the CD ready for removal.

While the preferred embodiment of the invention has been illustrated and described, it will be appreciated that various changes can be made therein without departing from the spirit and scope of the invention. For example, any of a variety of biasing means can be substituted for the spring tabs, such as coil springs and resilient 5 polymeric foam buttons.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A holder for a compact disc having a centrally located cutout, the holder comprising:

a base including a protective recess for nesting of the compact disc, a centrally located rosette integrally cast with the base, the rosette having arms extending upwardly from the base for centering and receiving the cutout of the compact disc, the arms having segments that extend radially inward terminating to collectively define a center fastener receiving opening;

a lid hinged to the base and including a button fastener for engaging the fastener receiving opening and positively engaging the rosette; and

a retaining ring mounted on the lid for holding the compact disc firmly in place when the lid is in the closed position.

2. The holder of Claim 1, further comprising spring means for elevating the compact disc for removal from the holder when the lid is in the open position.

3. A holder for a compact disc having a centrally located cutout comprising:

a base having a centrally located rosette mounted thereon, said rosette having arms extending upwardly from said base, said arms being arranged in a circular pattern for receiving the opening of a compact disc, said arms having radially inwardly extending segments that terminate to define a circular-shaped fastener receiving opening; and

a lid having a centrally located fastener button thereon, said button being sized to positively engage the fastener receiving opening on said rosette when the lid is in a closed position over the base.

4. The holder of Claim 3, wherein the outer diameter of the rosette is slightly less than the diameter of the CD opening and wherein the diameter of the fastener button is larger than the opening in the rosette, so that when said button engages the rosette an outward force is exerted on said segments and thus said arms so as to cause said arms to flex outwardly and increase the diameter of said rosette so that said rosette will frictionally engage the opening in said compact disc and retain said disc thereon.

5. The holder of Claim 4, wherein said lid has an annular retaining ring thereon, said ring concentrically surrounding said button and extending downwardly from said lid, said ring bearing on the top of a CD when the lid is in a closed position.

6. The holder of Claim 4, wherein said base has a means defining a recess surrounding said rosette thereon for receiving a compact disc.

7. The holder of Claim 4, further comprising spring means mounted on said base for engaging the bottom of a compact disc located on said base and elevating said disc when the lid is in an open position spaced from the base.

8. The holder of Claim 4, wherein said base and said lid are formed from paperboard and interconnected by an integral hinge.

9. The holder of Claim 8, wherein said rosette and said fastener button are formed from a moldable polymeric material.

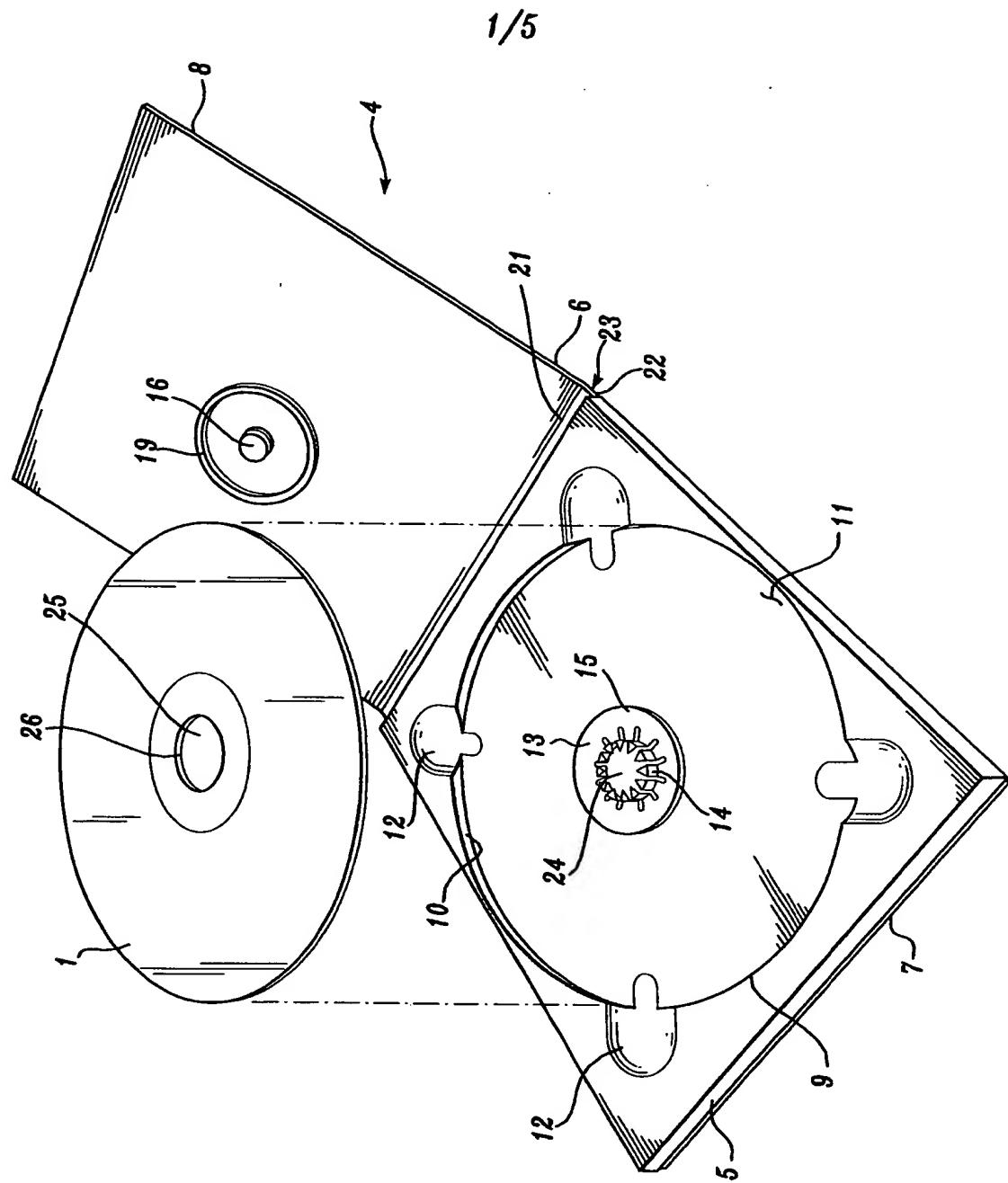
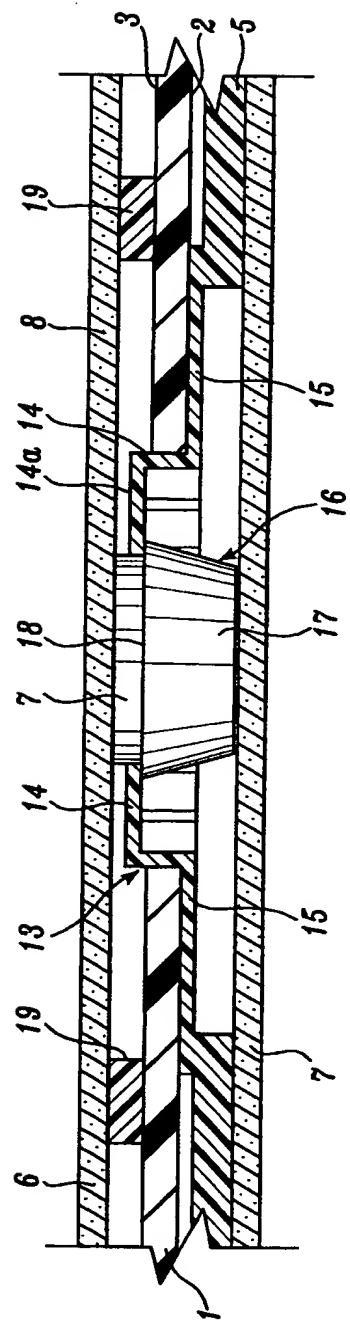
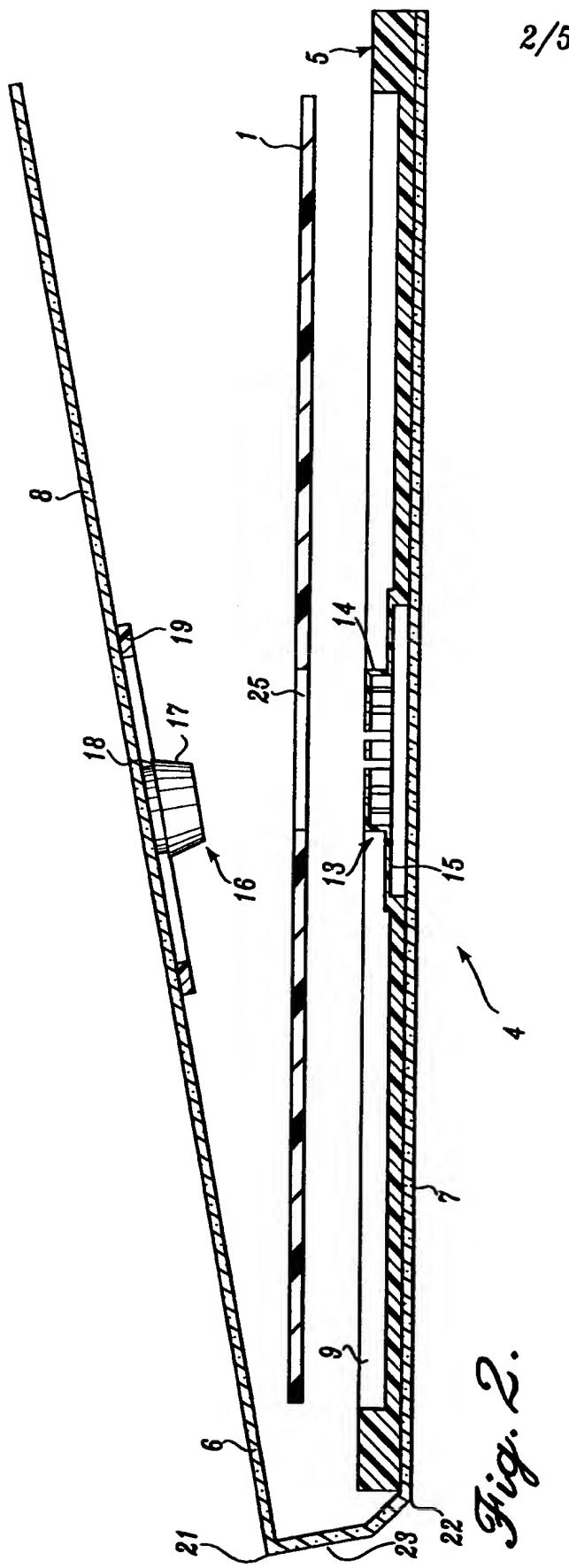


Fig. 1.



2/5

3/5

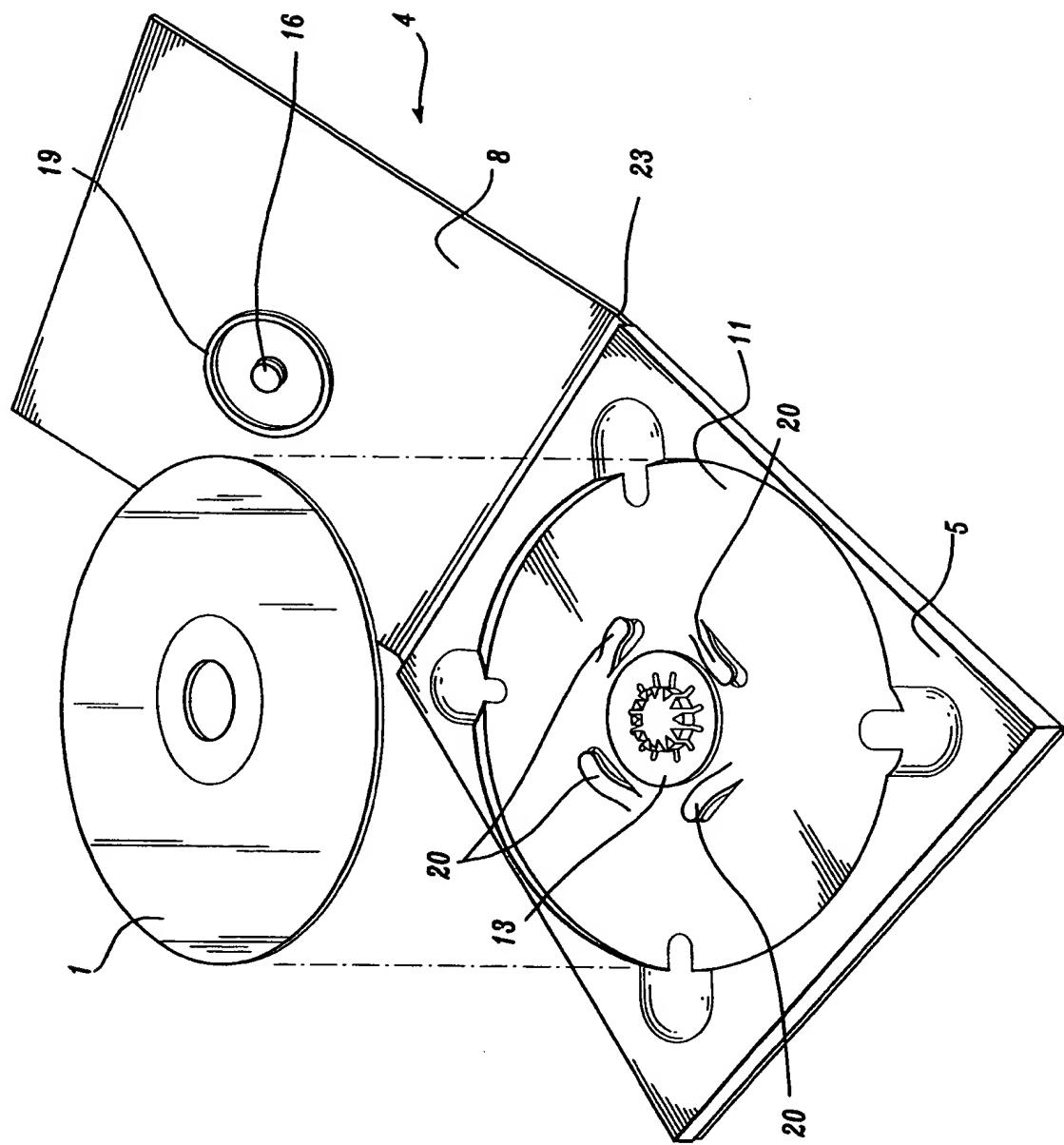
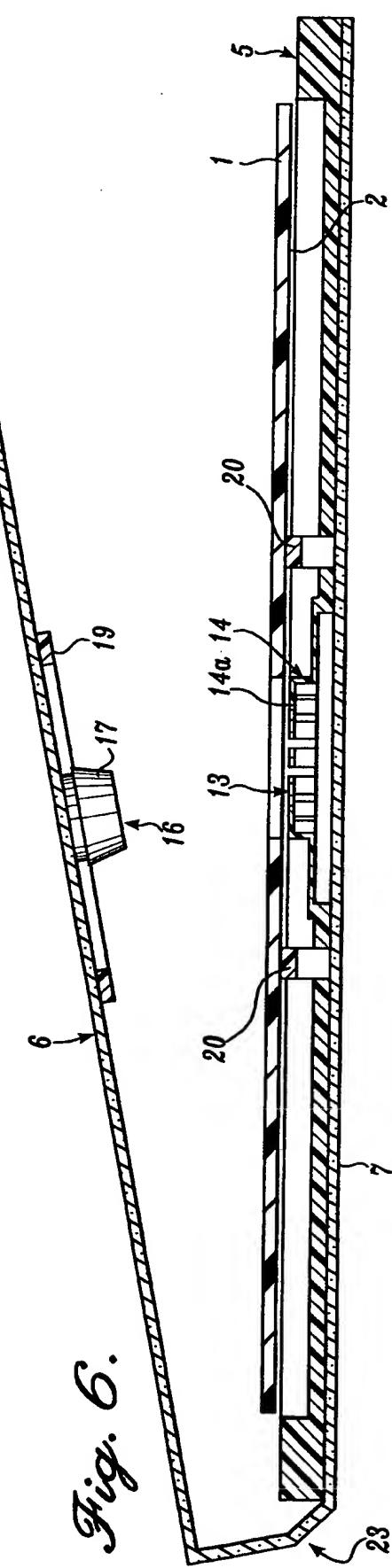
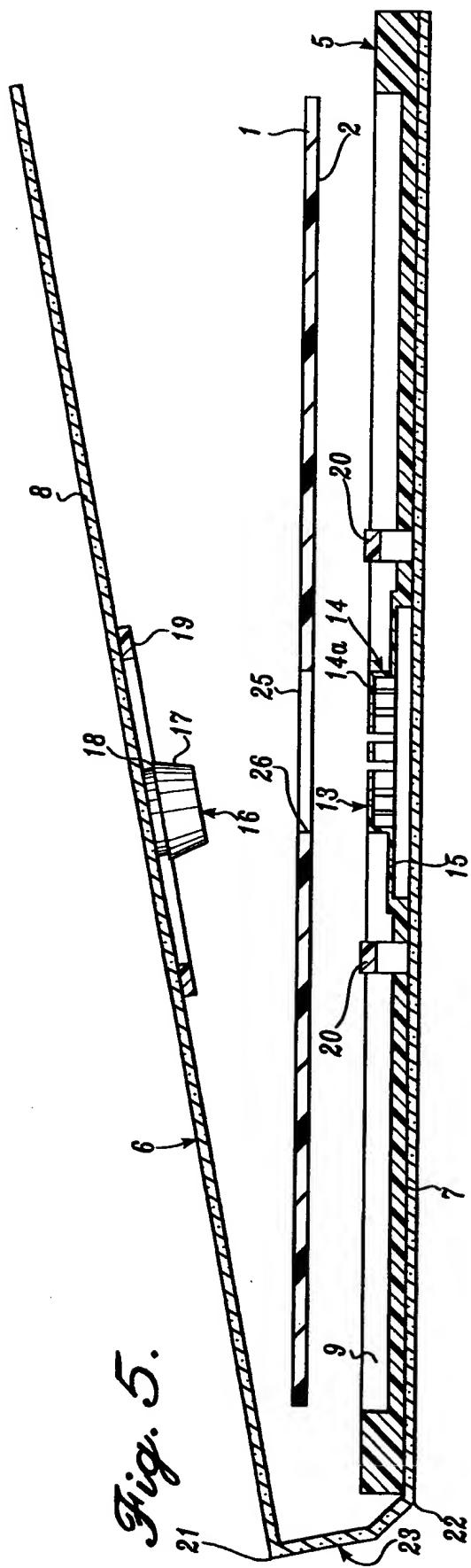


Fig. 4.



5/5

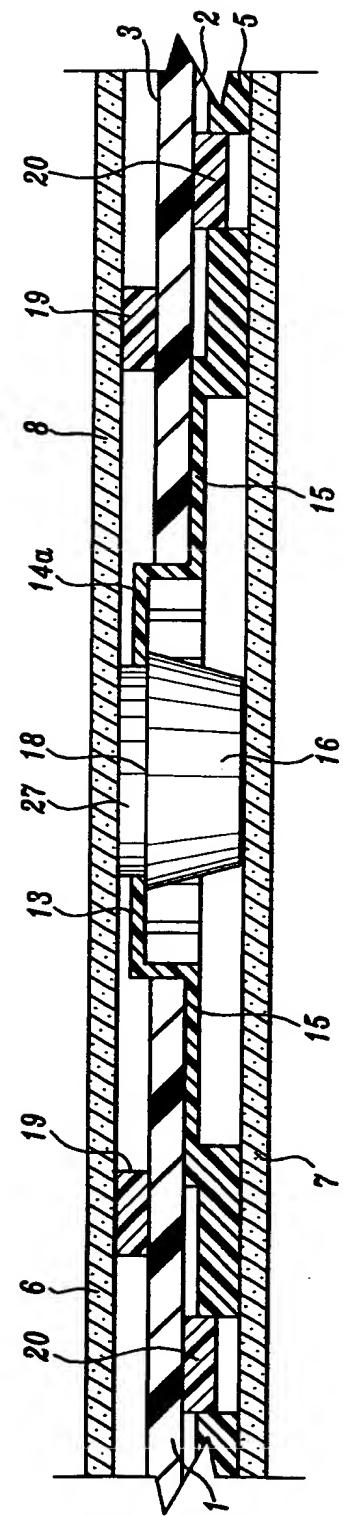


Fig. 7.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US98/25271

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :B65D 85/57

US CL : 206/307, 308.1, 310, 493

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 206/307, 308.1, 310, 493

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,402,882 A (BANDY et al) 04 April 1995	1-9
A	US 5,573,120 A (KAUFMAN et al.) 12 November 1996	1-9
A	US 5,494,156 A (NIES) 27 February 1996	1-9
A	US 5,400,902 A (KAMINSKI) March 28, 1995	1-9

Further documents are listed in the continuation of Box C.  See patent family annex.

• Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance		
"E" earlier document published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is taken alone
"O" document referring to an oral disclosure, use, exhibition or other means		document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"P" document published prior to the international filing date but later than the priority date claimed	"&"	document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
14 JANUARY 1999	05 FEB 1999
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	Authorized officer  PAUL SEWELL Telephone No. (703) 308-2126
Faxsimile No. (703) 305-3230	<i>Spela Veney</i> Spela Veney Paralegal Specialist Technology Center 3700